

**Appl. No.** : 10/609,015  
**Filed** : June 27, 2003

### **REMARKS**

Claims 1-6, 8-15, and 25-33 are pending in this application. Claim 1 has been amended. Claim 7 has been canceled. Claims 16-24 have been canceled as drawn to a nonelected invention. New Claims 25-33 have been added. Support for the amendment and new claims is found in the specification and claims as filed.

### **Restriction Requirement**

A Restriction Requirement was imposed in this application. In connection therewith, it is asserted that the application claims the following inventions: Claims 1-15, drawn to a method for etching a semiconductor substrate (Group I); Claims 16-23, drawn to a solar cell / semiconductor substrate / product (Group II); and Claims 24-25, drawn to an etching paste / composition / product (Group III). In a Response filed July 1, 2005, Applicants elected without traverse the invention of Group I, including Claims 1-15, and cancel without prejudice Claims 16-25 as drawn to a non-elected invention.

### **Claim Rejections - 35 U.S.C. § 102(e)**

Claims 1-11 and 13 have been rejected under 35 U.S.C. §102(e) as anticipated by U.S. Publication No. US 2003/0160026 A1 (hereinafter "*Klein et al.*"). "A rejection for anticipation under section 102 requires that each and every limitation of the claimed invention be disclosed in a single prior art reference." *See, e.g., In re Paulsen*, 31 U.S.P.Q.2d 1671 (Fed. Cir. 1994). *Klein et al.* does not disclose every element of Applicants' claims, and therefore cannot be considered as an anticipating reference under 35 U.S.C. § 102(b).

Pending independent Claim 1 as amended recites a method of etching a semiconductor substrate, the method comprising, *inter alia*, the step of "applying an etching paste comprising an etchant to a part or a layer of the substrate, wherein the semiconductor substrate is selected from the group consisting of a microcrystalline silicon substrate, a polycrystalline silicon substrate, an amorphous silicon substrate, a doped silicon substrate, a gallium arsenide substrate, a gallium arsenide phosphide substrate, a germanium substrate, and a silicon germanium substrate, and wherein the etchant is selected from the group consisting of potassium hydroxide, sodium hydroxide, ammonium hydroxide, combinations thereof, and derivatives thereof."

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Klein *et al.* only discloses etching of a glass, *i.e.*, a silicon oxide- or silicon nitride-based material. Klein *et al.* does not disclose etching a substrate that is not in an oxide or nitride form, such as a microcrystalline silicon substrate, a polycrystalline silicon substrate, an amorphous silicon substrate, a doped silicon substrate, a gallium arsenide substrate, a gallium arsenide phosphide substrate, a germanium substrate, or a silicon germanium substrats.

Moreover, Klein *et al.* only discloses fluoroide containing etchants. Klein *et al.* does not disclose use of an etchant such as potassium hydroxide, sodium hydroxide, or ammonium hydroxide. Accordingly, Klein *et al.* cannot anticipate pending Claims 1-11 and 13. Accordingly, Applicants respectfully request that the anticipation rejection be withdrawn.

**Claim Rejection - 35 U.S.C. §103(a)**

Claims 14-15 have been rejected under 35 U.S.C. §103(a) as obvious over Klein *et al.* in view of US 6,524,880 ("Moon *et al.*"). To articulate a *prima facie* case of obviousness under 35 U.S.C. §103(a), the PTO must, *inter alia*, cite prior art that teaches or suggests all the claimed limitations. *In re Royka*, 490 F.2d 981 (C.C.P.A. 1974).

As discussed above in regard to the section 102 rejection, Kline *et al.* does not disclose the specific substrates or etchants recited in pending independent Claim 1, from which Claims 14-15 depend. Moon *et al.*, like Kline *et al.*, focuses on wet-etching glass, namely, phosphosilicate glass, borosilicate glass, and boronsilicate glass, in a method for fabricating a solar cell. Moon *et al.* does include a single sentence stating that the substrate (of the solar cell) can be wet-etched (see col. 3, lines 20-22). However, no details regarding the wet etch of the substrate are provided. The only etching solution disclosed is a HF solution for etching the phosphosilicate glass or borosilicate glass. Because Moon *et al.* does not disclose the specific etchants recited in pending independent Claim 1, it cannot overcome the deficiencies of Kline *et al.*, which also does not disclose the specific etchants recited, and thus the combination of Kline *et al.* and Moon *et al.* cannot render Claims 14-15 obvious. Accordingly, Applicants respectfully request that the rejection be withdrawn.

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**Conclusion**

In view of the foregoing amendments and remarks, it is respectfully submitted that the present application is in condition for allowance. Should the Examiner have any remaining concerns that might prevent the prompt allowance of the application, the Examiner is respectfully invited to contact the undersigned at the telephone number below.

Respectfully submitted,

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Dated: 10/25/05

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AMEND

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